

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of claims:

1. (Currently amended) A compound according to Formula (I) or a salt thereof:



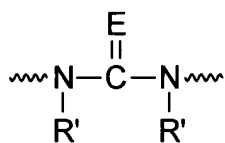
wherein

A comprises at least one substantially cell-membrane impermeable pendant group selected from natural, unnatural and synthetic amino acids, hydrophilic amines, peptides, polypeptides, thiol containing proteins and oligosaccharides, or a combination thereof;

X is selected from NR-, S(O)-, -S(O)O-, -S(O)₂-, -S(O)₂O-, -C(O)-, -C(S)-, -C(O)O-, C(S)O-, -C(S)S-, -P(O)(R₁)-, -P(O)(R₁)O-, or is absent;

B is selected from C₁-C₁₀ alkylene, C₂-C₁₀ alkenylene, C₂-C₁₀ alkynylene, C₃-C₁₀ cycloalkylene, C₅-C₁₀ cycloalkenylene, C₃-C₁₀ heterocycloalkylene, C₅-C₁₀ heterocycloalkenylene, C₆-C₁₂ arylene, heteroarylene or C₂-C₁₀ acyl;

X' is selected from NR-, -O-, -S-, -Se-, -S-S-, S(O)-, -OS(O)-, OS(O)O-, -OS(O)₂-, -OS(O)₂O-, -S(O)O-, -S(O)₂-, -S(O)₂O-, -OP(O)(R₁)-, -OP(O)(R₁)O-, -OP(O)(R₁)OP(O)(R₁)O-, -C(O)-, -C(S)-, -C(O)O-, C(S)O-, -C(S)S-, -P(O)(R₁)-, -P(O)(R₁)O-,



or is absent; wherein E is O, S, Se, NR or N(R)₂⁺;

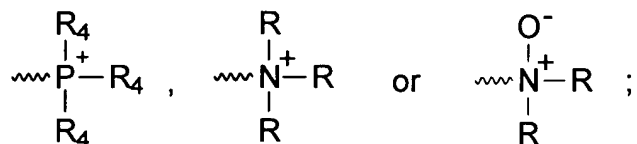
and

B' is selected from C₁-C₁₀ alkylene, C₂-C₁₀ alkenylene, C₂-C₁₀ alkynylene, C₃-C₁₀ cycloalkylene, C₅-C₁₀ cycloalkenylene, C₃-C₁₀ heterocycloalkylene, C₅-C₁₀ heterocycloalkenylene, C₆-C₁₂ arylene, and heteroarylene, or is absent;

wherein

each R is independently selected from hydrogen, C₁-C₁₀ alkyl, C₂-C₁₀ alkenyl, C₂-C₁₀ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₃-C₁₀ heterocycloalkyl, C₅-C₁₀ heterocycloalkenyl, C₆-C₁₂ aryl, heteroaryl, OR₂ or C₂-C₁₀ acyl;

R' is the same as R or two R' are taken together with the nitrogen atoms to which they are attached to form a 5 or 6-membered saturated or unsaturated heterocyclic ring;
each R₁ is independently selected from hydrogen, C₁-C₁₀ alkyl, C₂-C₁₀ alkenyl, C₂-C₁₀ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₃-C₁₀ heterocycloalkyl, C₅-C₁₀ heterocycloalkenyl, C₆-C₁₂ aryl, heteroaryl, halo, OR₂ or N(R)₂;
each R₂ is independently selected from hydrogen, C₁-C₁₀ alkyl, C₂-C₁₀ alkenyl, C₂-C₁₀ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₃-C₁₀ heterocycloalkyl, C₅-C₁₀ heterocycloalkenyl, C₆-C₁₂ aryl, heteroaryl or -C(O)R₅;
each R₅ is independently selected from hydrogen, C₁-C₁₀ alkyl, C₂-C₁₀ alkenyl, C₂-C₁₀ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₃-C₁₀ heterocycloalkyl, C₅-C₁₀ heterocycloalkenyl, C₆-C₁₂ aryl, heteroaryl, C₁-C₁₀ alkoxy, C₃-C₁₀ alkenyloxy, C₃-C₁₀ alkynyloxy, C₃-C₁₀ cycloalkyloxy, C₅-C₁₀ cycloalkenyloxy, C₃-C₁₀ heterocycloalkyloxy, C₅-C₁₀ heterocycloalkenyloxy, C₆-C₁₂ aryloxy, heteroaryloxy, C₁-C₁₀ alkylthio, C₃-C₁₀ alkenylthio, C₃-C₁₀ alkynylthio, C₃-C₁₀ cycloalkylthio, C₅-C₁₀ cycloalkenylthio, C₃-C₁₀ heterocycloalkylthio, C₅-C₁₀ heterocycloalkenylthio, C₆-C₁₂ arylthio, heteroarylthio, OH, SH or N(R)₂;
wherein for each instance that B and/or B' is arylene, the substituents directly attached to the respective arylene rings are in a para, meta or ortho relationship, and
wherein each alkylene, alkenylene, alkynylene, cycloalkylene, cycloalkenylene, heterocycloalkylene, heterocycloalkenylene, arylene, heteroarylene and acyl are optionally independently substituted with hydrogen, C₁-C₁₀ alkyl, C₂-C₁₀ alkenyl, C₂-C₁₀ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₃-C₁₀ heterocycloalkyl, C₅-C₁₀ heterocycloalkenyl, C₆-C₁₂ aryl, heteroaryl, halo, cyano, cyanate, isocyanate, OR_{2a}, SR₆, nitro, arsenoxide, -S(O)R₃, -OS(O)R₃, -S(O)₂R₃, -OS(O)₂R₃, -P(O)R₄R₄, -OP(O)R₄R₄, -N(R'')₂, -NRC(O)(CH₂)_mO, -C(O)R₅.



wherein R, R₁ and R₅ are as defined above; and

R_{2a} is selected from hydrogen, C₁-C₅ alkyl, C₂-C₅ alkenyl, C₂-C₅ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₆-C₁₂ aryl, -S(O)R₃, -S(O)₂R₃, -P(O)(R₄)₂, N(R)₂ or -C(O)R₅;

each R₃ is independently selected from hydrogen, C₁-C₁₀ alkyl, C₂-C₁₀ alkenyl, C₂-C₁₀ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₃-C₁₀ heterocycloalkyl, C₅-C₁₀ heterocycloalkenyl, C₆-C₁₂ aryl, heteroaryl, C₁-C₁₀ alkoxy, C₃-C₁₀ alkenyloxy, C₃-C₁₀ alkynyloxy, C₃-C₁₀ cycloalkyloxy, C₅-C₁₀ cycloalkenyloxy, C₃-C₁₀ heterocycloalkyloxy, C₅-C₁₀ heterocycloalkenyloxy, C₆-C₁₂ aryloxy, heteroaryloxy, C₁-C₁₀ alkylthio, C₃-C₁₀ alkenylthio, C₃-C₁₀ alkynylthio, C₃-C₁₀ cycloalkylthio, C₅-C₁₀ cycloalkenylthio, C₃-C₁₀ heterocycloalkylthio, C₅-C₁₀ heterocycloalkenylthio, C₆-C₁₂ arylthio, heteroarylthio or N(R)₂;

each R₄ is independently selected from hydrogen, C₁-C₁₀ alkyl, C₂-C₁₀ alkenyl, C₂-C₁₀ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₃-C₁₀ heterocycloalkyl, C₅-C₁₀ heterocycloalkenyl, C₆-C₁₂ aryl, heteroaryl, C₁-C₁₀ alkoxy, C₃-C₁₀ alkenyloxy, C₃-C₁₀ alkynyloxy, C₃-C₁₀ cycloalkyloxy, C₅-C₁₀ cycloalkenyloxy, C₃-C₁₀ heterocycloalkyloxy, C₅-C₁₀ heterocycloalkenyloxy, C₆-C₁₂ aryloxy, heteroaryloxy, C₁-C₁₀ alkylthio, C₃-C₁₀ alkenylthio, C₃-C₁₀ alkynylthio, C₃-C₁₀ cycloalkylthio, C₅-C₁₀ cycloalkenylthio, C₃-C₁₀ heterocycloalkylthio, C₅-C₁₀ heterocycloalkenylthio, C₆-C₁₂ arylthio, heteroarylthio, halo or N(R)₂;

R₆ is selected from C₁-C₁₀ alkyl, C₂-C₁₀ alkenyl, C₂-C₁₀ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₃-C₁₀ heterocycloalkyl, C₅-C₁₀ heterocycloalkenyl, C₆-C₁₂ aryl, heteroaryl, C₁-C₁₀ alkylthio, C₃-C₁₀ alkenylthio, C₃-C₁₀ alkynylthio, C₃-C₁₀ cycloalkylthio, C₅-C₁₀ cycloalkenylthio, C₃-C₁₀ heterocycloalkylthio, C₅-C₁₀ heterocycloalkenylthio, C₆-C₁₂ arylthio, heteroarylthio, -S(O)R₃, -S(O)₂R₃ or -C(O)R₅.

R" is the same as R or two R" taken together with the N atom to which they are attached may form a saturated, unsaturated or aromatic heterocyclic ring system;

Q is selected from halogen and -OS(O)₂Q₁; wherein Q₁ is selected from C₁-C₄ alkyl, C₁-C₄ perfluoroalkyl, phenyl, *p*-methylphenyl;

m is an integer selected from 1 to 5,

Y comprises at least one arsenoxide group or arsenoxide equivalent;

p is an integer selected from 1 to 10;

n is an integer selected from 0 to 20, and

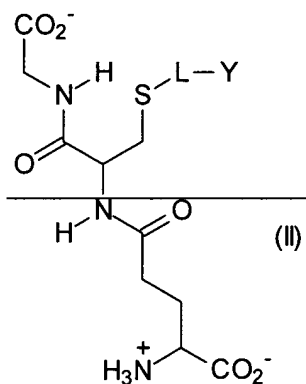
wherein the sum total of carbon atoms in A and $(\text{XBX}')_n\text{B}'$ [[L]] together, is greater than 6; and
with the proviso that:

when Y is arsenoxide, X is C=O or NR where R is hydrogen, B is C₆-arylene optionally substituted with amine, X' is absent, n is 1, and B' is absent, then A is not a hydrophilic amine.

2-8. (Canceled)

9. (Currently amended) The compound according to claim 1, wherein A is selected from the group consisting of glutathione, glucosamine, cysteinylglycine, cysteic acid, aspartic acid, glutamic acid, lysine, and arginine, and wherein the sulfur atom of each sulfur containing compound are may be optionally oxidised to form a sulfoxide or sulfone.

10. (Currently amended) The compound according to claim 1, wherein A is glutathione, ~~and wherein the compound is represented by Formula II:~~



~~wherein L comprises any suitable linker and/or spacer group, and Y comprises an arsenoxide or an arsenoxide equivalent.~~

11. (Previously presented) The compound according to claim 1, wherein p is an integer from 1 to 5.

12. (Previously presented) The compound according to claim 1, wherein p is 1.

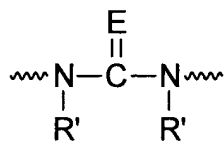
13. (Canceled)

14. (Currently amended) The compound according to claim 1 ~~13~~, wherein

X is selected from NR -, $-\text{C}(\text{O})$ -, $-\text{C}(\text{S})$ -, $-\text{C}(\text{O})\text{O}$ -, $-\text{C}(\text{S})\text{O}$ -, $-\text{C}(\text{S})\text{S}$ -, or is absent;

B is selected from $\text{C}_1\text{-C}_5$ alkylene, $\text{C}_2\text{-C}_5$ alkenylene, $\text{C}_2\text{-C}_5$ alkynylene, $\text{C}_3\text{-C}_{10}$ cycloalkylene, $\text{C}_5\text{-C}_{10}$ cycloalkenylene, $\text{C}_6\text{-C}_{12}$ arylene or $\text{C}_2\text{-C}_5$ acyl;

X' is selected from $-\text{O}$ -, $-\text{S}$ -, $-\text{NR}$ -, $-\text{S-S}$ -, $-\text{S}(\text{O})$ -, $-\text{S}(\text{O})_2$ -, $-\text{P}(\text{O})(\text{R}_1)$ -, $-\text{OP}(\text{O})(\text{R}_1)$ -, $\text{OP}(\text{O})(\text{R}_1)\text{O}$ -, $-\text{OP}(\text{O})(\text{R}_1)\text{OP}(\text{O})(\text{R}_1)\text{O}$ -, $-\text{C}(\text{O})$ -, $-\text{C}(\text{S})$ -, $-\text{C}(\text{O})\text{O}$ -, $-\text{C}(\text{S})\text{O}$ -, $-\text{C}(\text{S})\text{S}$ -, $-\text{Se}$ -,



or is absent; wherein E is O, S or $\text{N}(\text{R})_2^+$;

n is 0, 1 or 2; and

B' is $\text{C}_1\text{-C}_5$ alkylene, $\text{C}_2\text{-C}_5$ alkenylene, $\text{C}_2\text{-C}_5$ alkynylene, $\text{C}_3\text{-C}_{10}$ cycloalkylene, $\text{C}_5\text{-C}_{10}$ cycloalkenylene, $\text{C}_6\text{-C}_{12}$ arylene or is absent; and wherein

each R is independently selected from hydrogen, $\text{C}_1\text{-C}_5$ alkyl, $\text{C}_2\text{-C}_5$ alkenyl, $\text{C}_2\text{-C}_5$ alkynyl, $\text{C}_3\text{-C}_{10}$ cycloalkyl, $\text{C}_5\text{-C}_{10}$ cycloalkenyl, $\text{C}_6\text{-C}_{12}$ aryl, OR_2 or $\text{C}_2\text{-C}_{10}$ acyl;

R' is the same as R;

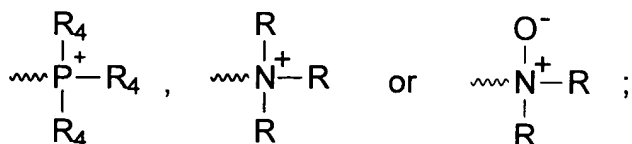
each R_1 is independently selected from hydrogen, $\text{C}_1\text{-C}_5$ alkyl, $\text{C}_2\text{-C}_5$ alkenyl, $\text{C}_2\text{-C}_5$ alkynyl, $\text{C}_3\text{-C}_{10}$ cycloalkyl, $\text{C}_5\text{-C}_{10}$ cycloalkenyl, $\text{C}_6\text{-C}_{12}$ aryl, halo, OR_2 or $\text{N}(\text{R})_2$;

each R_2 is independently selected from hydrogen, $\text{C}_1\text{-C}_5$ alkyl, $\text{C}_2\text{-C}_5$ alkenyl, $\text{C}_2\text{-C}_5$ alkynyl, $\text{C}_3\text{-C}_{10}$ cycloalkyl, $\text{C}_5\text{-C}_{10}$ cycloalkenyl, $\text{C}_6\text{-C}_{12}$ aryl or $-\text{C}(\text{O})\text{R}_5$;

each R_5 is independently selected from hydrogen, $\text{C}_1\text{-C}_5$ alkyl, $\text{C}_2\text{-C}_5$ alkenyl, $\text{C}_2\text{-C}_5$ alkynyl, $\text{C}_3\text{-C}_{10}$ cycloalkyl, $\text{C}_5\text{-C}_{10}$ cycloalkenyl, $\text{C}_6\text{-C}_{12}$ aryl, $\text{C}_1\text{-C}_5$ alkoxy, $\text{C}_3\text{-C}_5$ alkenyloxy, $\text{C}_3\text{-C}_5$ alkynyloxy, $\text{C}_3\text{-C}_{10}$ cycloalkyloxy, $\text{C}_5\text{-C}_{10}$ cycloalkenyloxy, $\text{C}_6\text{-C}_{12}$ aryloxy, $\text{C}_1\text{-C}_5$ alkylthio, $\text{C}_3\text{-C}_5$ alkenylthio, $\text{C}_3\text{-C}_5$ alkynylthio, $\text{C}_3\text{-C}_{10}$ cycloalkylthio, $\text{C}_5\text{-C}_{10}$ cycloalkenylthio, $\text{C}_6\text{-C}_{12}$ arylthio, OH, SH or $\text{N}(\text{R})_2$;

wherein each instance of arylene may have substituents A and X or X and Y in a para, meta or ortho relationship, and

wherein each alkylene, alkenylene, alkynylene, cycloalkylene, cycloalkenylene, arylene, and acyl are optionally may be independently substituted with hydrogen, $\text{C}_1\text{-C}_5$ alkyl, $\text{C}_2\text{-C}_5$ alkenyl, $\text{C}_2\text{-C}_5$ alkynyl, $\text{C}_3\text{-C}_{10}$ cycloalkyl, $\text{C}_5\text{-C}_{10}$ cycloalkenyl, $\text{C}_6\text{-C}_{12}$ aryl, halo, cyanate, isocyanate, OR_{2a} , SR_6 , nitro, arsenoxide, $-\text{S}(\text{O})\text{R}_3$, $-\text{OS}(\text{O})\text{R}_3$, $-\text{S}(\text{O})_2\text{R}_3$, $-\text{OS}(\text{O})_2\text{R}_3$, $-\text{P}(\text{O})\text{R}_4\text{R}_4$, $-\text{OP}(\text{O})\text{R}_4\text{R}_4$, $-\text{N}(\text{R}'')_2$, $\text{NRC}(\text{O})(\text{CH}_2)_m\text{Q}$, $-\text{C}(\text{O})\text{R}_5$,



wherein R, R₁ and R₅ are as defined above; and

R_{2a} selected from hydrogen, C₁-C₅ alkyl, C₂-C₅ alkenyl, C₂-C₅ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₆-C₁₂ aryl, -S(O)R₃, -S(O)₂R₃, -P(O)(R₄)₂, N(R)₂ or -C(O)R₅;

each R₃ is independently selected from hydrogen, C₁-C₅ alkyl, C₂-C₅ alkenyl, C₂-C₅ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₆-C₁₂ aryl, C₁-C₅ alkoxy, C₃-C₅ alkenyloxy, C₃-C₅ alkynyloxy, C₃-C₁₀ cycloalkyloxy, C₅-C₁₀ cycloalkenyloxy, C₆-C₁₂ aryloxy, C₁-C₅ alkylthio, C₃-C₅ alkenylthio, C₃-C₅ alkynylthio, C₃-C₁₀ cycloalkylthio, C₅-C₁₀ cycloalkenylthio, C₆-C₁₂ arylthio or N(R)₂;

each R₄ is independently selected from hydrogen, C₁-C₅ alkyl, C₂-C₅ alkenyl, C₂-C₅ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₆-C₁₂ aryl, C₁-C₅ alkoxy, C₃-C₅ alkenyloxy, C₃-C₅ alkynyloxy, C₃-C₁₀ cycloalkyloxy, C₅-C₁₀ cycloalkenyloxy, C₆-C₁₂ aryloxy, C₁-C₅ alkylthio, C₃-C₅ alkenylthio, C₃-C₅ alkynylthio, C₃-C₅ cycloalkylthio, C₅-C₅ cycloalkenylthio, C₆-C₁₂ arylthio, halo or N(R)₂;

R₆ is independently selected from C₁-C₅ alkyl, C₂-C₅ alkenyl, C₂-C₅ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₆-C₁₂ aryl, C₁-C₅ alkylthio, C₃-C₅ alkenylthio, C₃-C₅ alkynylthio, C₃-C₁₀ cycloalkylthio, C₅-C₁₀ cycloalkenylthio, C₆-C₁₂ arylthio, -S(O)R₃, -S(O)₂R₃ or -C(O)R₅,

R" is the same as R;

Q is selected from halogen and -OS(O)₂Q₁; wherein Q₁ is selected from C₁-C₄ alkyl, C₁-C₄ perfluoroalkyl, phenyl, *p*-methylphenyl; and

m is an integer from 1 to 5, and

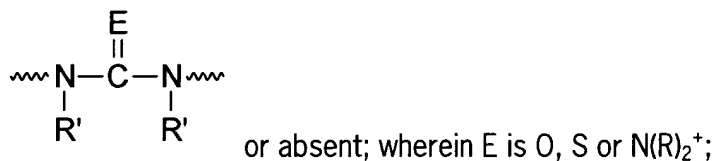
wherein the sum total of carbon atoms in A and (XBX')_nB' together, is greater than 6.

15. (Currently amended) A compound according to claim 1-13, wherein

X is absent;

B is selected from C₁-C₅ alkylene, C₆-C₁₂ arylene or C₂-C₅ acyl;

X' is selected from -O-, -S-, -NR-, -S-S-, -S(O)-, -S(O)₂-, -P(O)(R₁)-, -C(O)-, -C(S)-, -C(O)O-, -C(S)O-, -Se-,



n is 0, 1 or 2; and

B' is C₁-C₅ alkylene, C₆-C₁₂ arylene or is absent; and wherein

each R is independently selected from hydrogen, C₁-C₅ alkyl, C₃-C₁₀ cycloalkyl, C₆-C₁₂ aryl, OR₂ or C₂-C₅ acyl;

R' is the same as R;

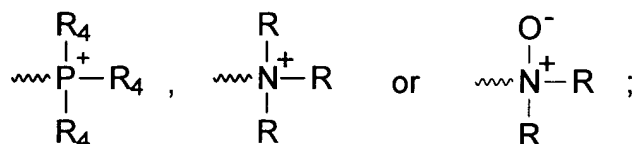
each R₁ is independently selected from hydrogen, C₁-C₅ alkyl, C₃-C₁₀ cycloalkyl, C₆-C₁₂ aryl, halo, OR₂ or N(R)₂;

each R₂ is independently selected from hydrogen, C₁-C₅ alkyl, C₃-C₁₀ cycloalkyl, C₆-C₁₂ aryl or -C(O)R₅;

each R₅ is independently selected from hydrogen, C₁-C₅ alkyl, C₂-C₅ alkenyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₆-C₁₂ aryl, C₁-C₅ alkoxy, C₃-C₅ alkenyloxy, C₃-C₁₀ cycloalkyloxy, C₅-C₁₀ cycloalkenyloxy, C₆-C₁₂ aryloxy, C₁-C₅ alkylthio, C₃-C₅ alkenylthio, C₃-C₁₀ cycloalkylthio, C₅-C₁₀ cycloalkenylthio, C₆-C₁₂ arylthio, OH, SH or N(R)₂;

wherein for each instance that B and/or B' is arylene, the substituents directly attached to the respective arylene rings (~~including arsenoxide or arsenoxide equivalent~~), may be are in a para, meta or ortho relationship, and

wherein each alkylene, alkenylene, alkynylene, cycloalkylene, cycloalkenylene, arylene, and acyl may be are optionally independently substituted with hydrogen, C₁-C₅ alkyl, C₂-C₅ alkenyl, C₂-C₅ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₆-C₁₂ aryl, halo, cyano, cyanate, isocyanate, OR_{2a}, SR₆, nitro, arsenoxide, -S(O)R₃, -OS(O)R₃, -S(O)₂R₃, -OS(O)₂R₃, -P(O)R₄R₄, -OP(O)R₄R₄, -N(R'')₂, -NRC(O)(CH₂)_mQ, -C(O)R₅,



wherein R, R₁ and R₅ are as defined above; and

R_{2a} is selected from hydrogen, C_1-C_5 alkyl, C_3-C_{10} cycloalkyl, C_6-C_{12} aryl, $-S(O)R_3$, $-S(O)_2R_3$, $-P(O)(R_4)_2$ and $-C(O)R_5$;
 each R_3 is independently selected from hydrogen, C_1-C_5 alkyl, C_3-C_{10} cycloalkyl, C_6-C_{12} aryl, C_1-C_5 alkoxy, C_3-C_{10} cycloalkyloxy, C_6-C_{12} aryloxy, C_1-C_5 alkylthio, C_3-C_{10} cycloalkylthio, C_6-C_{12} arylthio or $N(R)_2$;
 each R_4 is independently selected from hydrogen, C_1-C_5 alkyl, C_3-C_{10} cycloalkyl, C_6-C_{12} aryl, C_1-C_5 alkoxy, C_3-C_{10} cycloalkyloxy, C_6-C_{12} aryloxy, halo or $N(R)_2$;
 R_6 is selected from C_1-C_5 alkyl, C_3-C_{10} cycloalkyl, C_6-C_{12} aryl, C_1-C_5 alkylthio, C_3-C_{10} cycloalkylthio, C_6-C_{12} arylthio, $-S(O)R_3$, $-S(O)_2R_3$ or $-C(O)R_5$,
 R'' is the same as R ;
 Q is selected from halogen and $-OS(O)_2Q_1$; wherein Q_1 is selected from C_1-C_4 alkyl, C_1-C_4 perfluoroalkyl, phenyl, *p*-methylphenyl; and
 m is 1 to 5.

16. (Currently amended) A compound according to claim 1-13, wherein

X is absent;

B is selected from C_1-C_5 alkylene, C_6-C_{12} arylene or C_2-C_5 acyl;

X' is selected from $-O-$, $-S-$, $-NR-$, $-C(O)-$, $-C(O)O-$, or is absent;

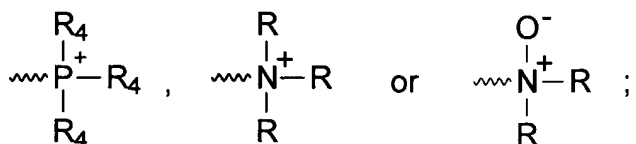
n is 1; and

B' is C_1-C_5 alkylene, C_6-C_{12} arylene or is absent; and

R is selected from hydrogen, C_1-C_5 alkyl, C_6-C_{12} aryl or C_2-C_5 acyl;

wherein for each instance that B and/or B' is arylene, the substituents directly attached to the respective arylene rings ~~(including arsenoxide or arsenoxide equivalent)~~, may be are in a para, meta or ortho relationship, and

wherein each alkylene, arylene, and acyl ~~may be~~ are optionally independently substituted with hydrogen, C_1-C_5 alkyl, C_2-C_5 alkenyl, C_2-C_5 alkynyl, C_3-C_{10} cycloalkyl, C_5-C_{10} cycloalkenyl, C_6-C_{12} aryl, halo, cyano, cyanate, isocyanate, OR_{2a} , SR_6 , nitro, arsenoxide, $-S(O)R_3$, $-S(O)_2R_3$, $-P(O)R_4R_4$, $-N(R'')_2$, $-NRC(O)(CH_2)_mQ$, $-C(O)R_5$,



wherein each R is independently selected from hydrogen, C₁-C₅ alkyl, C₆-C₁₂ aryl or C₂-C₅ acyl;

R_{2a} is selected from hydrogen, C₁-C₅ alkyl, C₆-C₁₂ aryl, -S(O)R₃, -S(O)₂R₃, -P(O)(R₄)₂ or -C(O)R₅; each R₃ is independently selected from hydrogen, C₁-C₅ alkyl, C₆-C₁₂ aryl, C₁-C₅ alkoxy, C₆-C₁₂ aryloxy, C₁-C₅ alkylthio, or C₆-C₁₂ arylthio;

each R₄ is independently selected from hydrogen, C₁-C₅ alkyl, C₆-C₁₂ aryl, C₁-C₅ alkoxy, C₆-C₁₂ aryloxy, C₁-C₅ alkylthio, C₆-C₁₂ arylthio, halo or N(R)₂;

each R₅ is independently selected from hydrogen, C₁-C₅ alkyl, C₆-C₁₂ aryl, C₁-C₅ alkoxy, C₆-C₁₂ aryloxy, C₁-C₅ alkylthio, C₆-C₁₂ arylthio, OH, SH or N(R)₂;

R₆ is selected from C₁-C₅ alkyl, C₆-C₁₂ aryl, C₁-C₅ alkylthio, C₆-C₁₂ arylthio, -S(O)R₃, -S(O)₂R₃ or -C(O)R₅,

R'' is the same as R above;

Q is selected from halogen and -OS(O)₂Q₁; wherein Q₁ is selected from C₁-C₄ alkyl, C₁-C₄ perfluoroalkyl, phenyl, *p*-methylphenyl; and

m is 1 to 5.

17. (Currently amended) A compound according to claim ~~1~~ 13, wherein

X is absent;

B is C₂-C₅ acyl;

X' is NR;

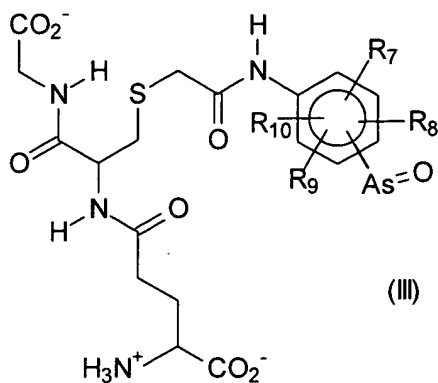
n is 1;

B' is phenylene; and

R is H;

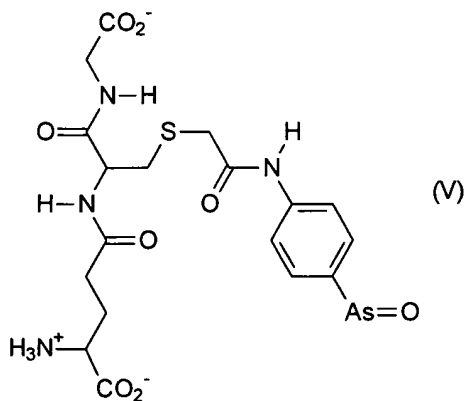
wherein ~~for each instance that B and/or B' is arylene, the substituents directly attached to the phenylene ring~~ for each instance that B and/or B' is arylene, the substituents directly attached to the phenylene ring ~~respective arylene rings (including arsenoxide or arsenoxide equivalent), may be~~ are in a para-, meta- or ortho- relationship. [[,]]

18. (Previously presented) The compound according to claim 1 represented by Formula III:

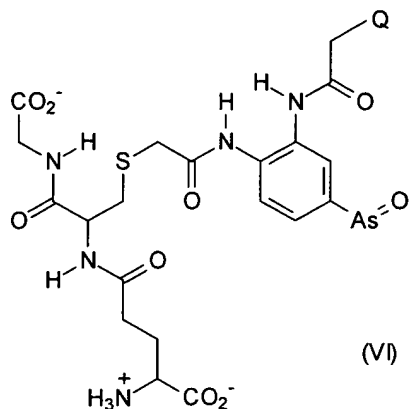


, and wherein

- R_7 to R_{10} are independently selected from the group consisting of: hydrogen, C_1 - C_5 alkyl, C_6 - C_{12} aryl, halogen, hydroxy, amino, nitro, carboxy, C_1 - C_5 alkoxy, $-OS(O)_2R_3$ or $-NHC(O)CH_2Q$ wherein Q is halogen, $-OS(O)_2CH_3$, $-OS(O)_2C_6H_5$ or $-OS(O)_2$ - p tolyl.
19. (Previously presented) The compound according to claim 18, wherein R_7 to R_{10} are independently selected from hydrogen, halogen, hydroxy, amino, nitro, carboxy, C_1 - C_5 alkoxy, methyl, ethyl, iso-propyl, tert-butyl, phenyl, and $-NHC(O)CH_2Q$ wherein Q is halogen, $-OS(O)_2CH_3$, $-OS(O)_2C_6H_5$, or $-OS(O)_2$ - p -tolyl.
20. (Previously presented) The compound according to claim 18, wherein the arsenoxide ($-As=O$) group is at the 4-position of the phenylene ring.
21. (Previously presented) The compound according to claim 1, wherein the compound is 4-(N-(S-glutathionylacetyl)amino)phenylarsenoxide (GSAO) and is represented by Formula V:

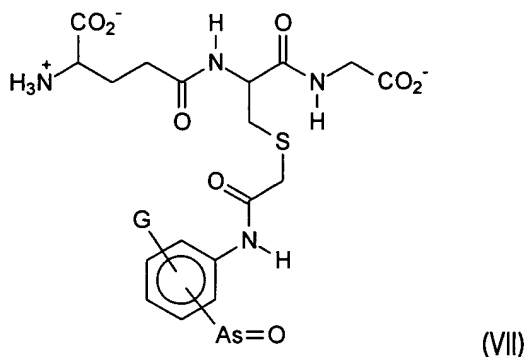


22. (Previously presented) The compound according to claim 1, wherein the compound is represented by Formula VI:



wherein Q is any halogen.

23. (Previously presented) The compound according to claim 1, wherein the compound is represented by Formula VII:



wherein G is selected from the group consisting of: hydrogen, halogen, hydroxy, amino, nitro, carboxy, C₁-C₅ alkoxy, C₁-C₅ alkyl and C₆-C₁₂ aryl and -NHC(O)CH₂Q wherein Q is halogen, -OS(O)₂CH₃, -OS(O)₂C₆H₅ or -OS(O)₂p tolyl.

24. (Previously presented) The compound according to claim 23, wherein G is selected from the group consisting of: hydrogen, halogen, hydroxy, amino, nitro, carboxy, C₁-C₅ alkoxy, methyl, ethyl, iso-propyl, tert-butyl, phenyl, and -NHC(O)CH₂Q wherein Q is halogen, -OS(O)₂CH₃, -OS(O)₂C₆H₅ or -OS(O)₂p tolyl.
25. (Previously presented) The compound according to claim 23, wherein G is selected from the group consisting of hydroxy, fluorine, amino, and nitro.

26-29. (Canceled)

30. (Previously presented) The compound according to claim 1, which is linked to a detector group.

31. (Previously presented) The compound of claim 30, wherein said detector group is selected from the group consisting of fluorophore, biotin, a radionucleotide, fluorescein, and a group comprising a transition element.

32. (Previously presented) The compound according to claim 30, wherein the detector group is biotin.

33. (Previously presented) The compound according to claim 31, wherein the radionucleotide is selected from the group consisting of ^3H , ^{14}C , ^{32}P , ^{33}P , ^{35}S , ^{125}I , ^{131}I , ^{123}I , ^{111}In , ^{105}Rh , ^{153}Sm , ^{67}Cu , ^{67}Ga , ^{166}Ho , ^{177}Lu , ^{186}Re , ^{188}Re , and $^{99\text{m}}\text{Tc}$.

34. (Previously presented) The compound according to claim 33, wherein the radionucleotide is selected from the group consisting of ^3H or ^{14}C .

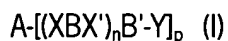
35-37 (Canceled)

38. (Previously presented) A pharmaceutical composition comprising a compound of claim 1, together with a pharmaceutically acceptable carrier, adjuvant and/or diluent.

39-43. (Canceled)

44. (Previously presented) The compound according to claim 24, wherein G is selected from the group consisting of hydroxy, fluorine, amino, and nitro.

45. (New) A compound according to Formula (I) or a salt thereof:



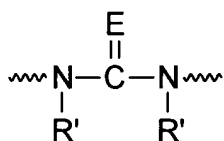
wherein

A comprises at least one substantially cell-membrane impermeable pendant group selected from natural, unnatural and synthetic amino acids, peptides, polypeptides, thiol containing proteins and oligosaccharides, or a combination thereof;

X is selected from NR-, S(O)-, -S(O)O-, -S(O)₂-, -S(O)₂O-, -C(O)-, -C(S)-, -C(O)O-, C(S)O-, -C(S)S-, -P(O)(R₁)-, -P(O)(R₁)O-, or is absent;

B is selected from C₁-C₁₀ alkylene, C₂-C₁₀ alkenylene, C₂-C₁₀ alkynylene, C₃-C₁₀ cycloalkylene, C₅-C₁₀ cycloalkenylene, C₃-C₁₀ heterocycloalkylene, C₅-C₁₀ heterocycloalkenylene, C₆-C₁₂ arylene, heteroarylene or C₂-C₁₀ acyl;

X' is selected from NR-, -O-, -S-, -Se-, -S-S-, S(O)-, -OS(O)-, OS(O)O-, -OS(O)₂-, -OS(O)₂O-, -S(O)O-, -S(O)₂-, -S(O)₂O-, -OP(O)(R₁)-, -OP(O)(R₁)O-, -OP(O)(R₁)OP(O)(R₁)O-, -C(O)-, -C(S)-, -C(O)O-, C(S)O-, -C(S)S-, -P(O)(R₁)-, -P(O)(R₁)O-,



or is absent; wherein E is O, S, Se, NR or N(R)₂⁺;

and

B' is selected from C₁-C₁₀ alkylene, C₂-C₁₀ alkenylene, C₂-C₁₀ alkynylene, C₃-C₁₀ cycloalkylene, C₅-C₁₀ cycloalkenylene, C₃-C₁₀ heterocycloalkylene, C₅-C₁₀ heterocycloalkenylene, C₆-C₁₂ arylene, and heteroarylene, or is absent;

wherein

each R is independently selected from hydrogen, C₁-C₁₀ alkyl, C₂-C₁₀ alkenyl, C₂-C₁₀ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₃-C₁₀ heterocycloalkyl, C₅-C₁₀ heterocycloalkenyl, C₆-C₁₂ aryl, heteroaryl, OR₂ or C₂-C₁₀ acyl;

R' is the same as R or two R' are taken together with the nitrogen atoms to which they are attached to form a 5 or 6-membered saturated or unsaturated heterocyclic ring;

each R₁ is independently selected from hydrogen, C₁-C₁₀ alkyl, C₂-C₁₀ alkenyl, C₂-C₁₀ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₃-C₁₀ heterocycloalkyl, C₅-C₁₀ heterocycloalkenyl, C₆-C₁₂ aryl, heteroaryl, halo, OR₂ or N(R)₂;

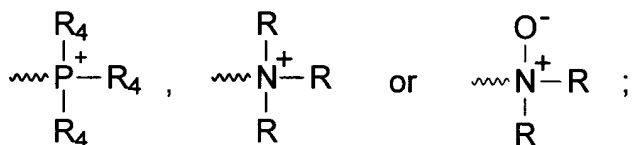
each R₂ is independently selected from hydrogen, C₁-C₁₀ alkyl, C₂-C₁₀ alkenyl, C₂-C₁₀ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₃-C₁₀ heterocycloalkyl, C₅-C₁₀ heterocycloalkenyl, C₆-C₁₂ aryl, heteroaryl or -C(O)R₅;

each R₅ is independently selected from hydrogen, C₁-C₁₀ alkyl, C₂-C₁₀ alkenyl, C₂-C₁₀ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₃-C₁₀ heterocycloalkyl, C₅-C₁₀ heterocycloalkenyl, C₆-C₁₂ aryl, heteroaryl, C₁-C₁₀ alkoxy, C₃-C₁₀ alkenyloxy, C₃-C₁₀

alkynyloxy, C₃-C₁₀ cycloalkyloxy, C₅-C₁₀ cycloalkenyloxy, C₃-C₁₀ heterocycloalkyloxy, C₅-C₁₀ heterocycloalkenyloxy, C₆-C₁₂ aryloxy, heteroaryloxy, C₁-C₁₀ alkylthio, C₃-C₁₀ alkenylthio, C₃-C₁₀ alkynylthio, C₃-C₁₀ cycloalkylthio, C₅-C₁₀ cycloalkenylthio, C₃-C₁₀ heterocycloalkylthio, C₅-C₁₀ heterocycloalkenylthio, C₆-C₁₂ arylthio, heteroarylthio, OH, SH or N(R)₂;

wherein for each instance that B and/or B' is arylene, the substituents directly attached to the respective arylene rings are in a para, meta or ortho relationship, and

wherein each alkylene, alkenylene, alkynylene, cycloalkylene, cycloalkenylene, heterocycloalkylene, heterocycloalkenylene, arylene, heteroarylene and acyl are optionally independently substituted with hydrogen, C₁-C₁₀ alkyl, C₂-C₁₀ alkenyl, C₂-C₁₀ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₃-C₁₀ heterocycloalkyl, C₅-C₁₀ heterocycloalkenyl, C₆-C₁₂ aryl, heteroaryl, halo, cyano, cyanate, isocyanate, OR_{2a}, SR₆, nitro, arsenoxide, -S(O)R₃, -OS(O)R₃, -S(O)₂R₃, -OS(O)₂R₃, -P(O)R₄R₄, -OP(O)R₄R₄, -N(R'')₂, -NRC(O)(CH₂)_mQ, -C(O)R₅,



wherein R, R₁ and R₅ are as defined above; and

R_{2a} is selected from hydrogen, C₁-C₅ alkyl, C₂-C₅ alkenyl, C₂-C₅ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₆-C₁₂ aryl, -S(O)R₃, -S(O)₂R₃, -P(O)(R₄)₂, N(R)₂ or -C(O)R₅;

each R₃ is independently selected from hydrogen, C₁-C₁₀ alkyl, C₂-C₁₀ alkenyl, C₂-C₁₀ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₃-C₁₀ heterocycloalkyl, C₅-C₁₀ heterocycloalkenyl, C₆-C₁₂ aryl, heteroaryl, C₁-C₁₀ alkoxy, C₃-C₁₀ alkenyloxy, C₃-C₁₀ alkynyloxy, C₃-C₁₀ cycloalkyloxy, C₅-C₁₀ cycloalkenyloxy, C₃-C₁₀ heterocycloalkyloxy, C₅-C₁₀ heterocycloalkenyloxy, C₆-C₁₂ aryloxy, heteroaryloxy, C₁-C₁₀ alkylthio, C₃-C₁₀ alkenylthio, C₃-C₁₀ alkynylthio, C₃-C₁₀ cycloalkylthio, C₅-C₁₀ cycloalkenylthio, C₃-C₁₀ heterocycloalkylthio, C₅-C₁₀ heterocycloalkenylthio, C₆-C₁₂ arylthio, heteroarylthio or N(R)₂;

each R₄ is independently selected from hydrogen, C₁-C₁₀ alkyl, C₂-C₁₀ alkenyl, C₂-C₁₀ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₃-C₁₀ heterocycloalkyl, C₅-C₁₀

heterocycloalkenyl, C₆-C₁₂ aryl, heteroaryl, C₁-C₁₀ alkoxy, C₃-C₁₀ alkenyloxy, C₃-C₁₀ alkynyloxy, C₃-C₁₀ cycloalkyloxy, C₅-C₁₀ cycloalkenyloxy, C₃-C₁₀ heterocycloalkyloxy, C₅-C₁₀ heterocycloalkenyloxy, C₆-C₁₂ aryloxy, heteroaryloxy, C₁-C₁₀ alkylthio, C₃-C₁₀ alkenylthio, C₃-C₁₀ alkynylthio, C₃-C₁₀ cycloalkylthio, C₅-C₁₀ cycloalkenylthio, C₃-C₁₀ heterocycloalkylthio, C₅-C₁₀ heterocycloalkenylthio, C₆-C₁₂ arylthio, heteroarylthio, halo or N(R)₂;

R₆ is selected from C₁-C₁₀ alkyl, C₂-C₁₀ alkenyl, C₂-C₁₀ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₃-C₁₀ heterocycloalkyl, C₅-C₁₀ heterocycloalkenyl, C₆-C₁₂ aryl, heteroaryl, C₁-C₁₀ alkylthio, C₃-C₁₀ alkenylthio, C₃-C₁₀ alkynylthio, C₃-C₁₀ cycloalkylthio, C₅-C₁₀ cycloalkenylthio, C₃-C₁₀ heterocycloalkylthio, C₅-C₁₀ heterocycloalkenylthio, C₆-C₁₂ arylthio, heteroarylthio, -S(O)R₃, -S(O)₂R₃ or -C(O)R₅,

R" is the same as R or two R" taken together with the N atom to which they are attached may form a saturated, unsaturated or aromatic heterocyclic ring system;

Q is selected from halogen and -OS(O)₂Q₁; wherein Q₁ is selected from C₁-C₄ alkyl, C₁-C₄ perfluoroalkyl, phenyl, *p*-methylphenyl;

m is an integer selected from 1 to 5,

Y comprises at least one arsenoxide group;

p is an integer selected from 1 to 10;

n is an integer selected from 0 to 20, and

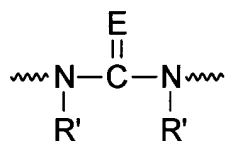
wherein the sum total of carbon atoms in A and (XBX')_nB' together, is greater than 6.

46. (New) The compound according to claim 45, wherein A is selected from the group consisting of glutathione, glucosamine, cysteinylglycine, cysteic acid, aspartic acid, glutamic acid, lysine, and arginine, and wherein the sulfur atom of each sulfur containing compound are optionally oxidised to form a sulfoxide or sulfone.
47. (New) The compound according to claim 1, wherein A is glutathione.
48. (New) The compound according to claim 45, wherein p is an integer from 1 to 5.
49. (New) The compound according to claim 45, wherein p is 1.
50. (New) The compound according to claim 45, wherein

X is selected from NR-, -C(O)-, -C(S)-, -C(O)O-, -C(S)O-, -C(S)S-, or is absent;

B is selected from C₁-C₅ alkylene, C₂-C₅ alkenylene, C₂-C₅ alkynylene, C₃-C₁₀ cycloalkylene, C₅-C₁₀ cycloalkenylene, C₆-C₁₂ arylene or C₂-C₅ acyl;

X' is selected from -O-, -S-, -NR-, -S-S-, -S(O)-, -S(O)₂-, -P(O)(R₁)-, -OP(O)(R₁)-, OP(O)(R₁)O-, -OP(O)(R₁)OP(O)(R₁)O-, -C(O)-, -C(S)-, -C(O)O-, -C(S)O-, -C(S)S-, -Se-,



or is absent; wherein E is O, S or N(R)₂⁺;

n is 0, 1 or 2; and

B' is C₁-C₅ alkylene, C₂-C₅ alkenylene, C₂-C₅ alkynylene, C₃-C₁₀ cycloalkylene, C₅-C₁₀ cycloalkenylene, C₆-C₁₂ arylene or is absent; and wherein

each R is independently selected from hydrogen, C₁-C₅ alkyl, C₂-C₅ alkenyl, C₂-C₅ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₆-C₁₂ aryl, OR₂ or C₂-C₁₀ acyl;

R' is the same as R;

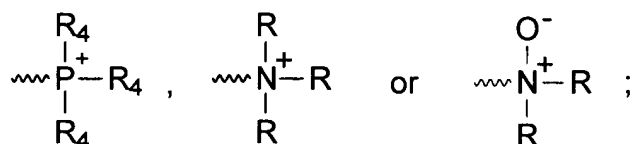
each R₁ is independently selected from hydrogen, C₁-C₅ alkyl, C₂-C₅ alkenyl, C₂-C₅ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₆-C₁₂ aryl, halo, OR₂ or N(R)₂;

each R₂ is independently selected from hydrogen, C₁-C₅ alkyl, C₂-C₅ alkenyl, C₂-C₅ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₆-C₁₂ aryl or -C(O)R₅;

each R₅ is independently selected from hydrogen, C₁-C₅ alkyl, C₂-C₅ alkenyl, C₂-C₅ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₆-C₁₂ aryl, C₁-C₅ alkoxy, C₃-C₅ alkenyloxy, C₃-C₅ alkynyloxy, C₃-C₁₀ cycloalkyloxy, C₅-C₁₀ cycloalkenyloxy, C₆-C₁₂ aryloxy, C₁-C₅ alkylthio, C₃-C₅ alkenylthio, C₃-C₅ alkynylthio, C₃-C₁₀ cycloalkylthio, C₅-C₁₀ cycloalkenylthio, C₆-C₁₂ arylthio, OH, SH or N(R)₂;

wherein each instance of arylene may have substituents A and X or X and Y in a para, meta or ortho relationship, and

wherein each alkylene, alkenylene, alkynylene, cycloalkylene, cycloalkenylene, arylene, and acyl are optionally independently substituted with hydrogen, C₁-C₅ alkyl, C₂-C₅ alkenyl, C₂-C₅ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₆-C₁₂ aryl, halo, cyanate, isocyanate, OR_{2a}, SR₆, nitro, arsenoxide, -S(O)R₃, -OS(O)R₃, -S(O)₂R₃, -OS(O)₂R₃, -P(O)R₄R₄, -OP(O)R₄R₄, -N(R'')₂, NRC(O)(CH₂)_mQ, -C(O)R₅,



wherein R, R₁ and R₅ are as defined above; and

R_{2a} selected from hydrogen, C₁-C₅ alkyl, C₂-C₅ alkenyl, C₂-C₅ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₆-C₁₂ aryl, -S(O)R₃, -S(O)₂R₃, -P(O)(R₄)₂, N(R)₂ or -C(O)R₅;

each R₃ is independently selected from hydrogen, C₁-C₅ alkyl, C₂-C₅ alkenyl, C₂-C₅ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₆-C₁₂ aryl, C₁-C₅ alkoxy, C₃-C₅ alkenyloxy, C₃-C₅ alkynyloxy, C₃-C₁₀ cycloalkyloxy, C₅-C₁₀ cycloalkenyloxy, C₆-C₁₂ aryloxy, C₁-C₅ alkylthio, C₃-C₅ alkenylthio, C₃-C₅ alkynylthio, C₃-C₁₀ cycloalkylthio, C₅-C₁₀ cycloalkenylthio, C₆-C₁₂ arylthio or N(R)₂;

each R₄ is independently selected from hydrogen, C₁-C₅ alkyl, C₂-C₅ alkenyl, C₂-C₅ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₆-C₁₂ aryl, C₁-C₅ alkoxy, C₃-C₅ alkenyloxy, C₃-C₅ alkynyloxy, C₃-C₁₀ cycloalkyloxy, C₅-C₁₀ cycloalkenyloxy, C₆-C₁₂ aryloxy, C₁-C₅ alkylthio, C₃-C₅ alkenylthio, C₃-C₅ alkynylthio, C₃-C₅ cycloalkylthio, C₅-C₅ cycloalkenylthio, C₆-C₁₂ arylthio, halo or N(R)₂;

R₆ is independently selected from C₁-C₅ alkyl, C₂-C₅ alkenyl, C₂-C₅ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₆-C₁₂ aryl, C₁-C₅ alkylthio, C₃-C₅ alkenylthio, C₃-C₅ alkynylthio, C₃-C₁₀ cycloalkylthio, C₅-C₁₀ cycloalkenylthio, C₆-C₁₂ arylthio, -S(O)R₃, -S(O)₂R₃ or -C(O)R₅,

R'' is the same as R;

Q is selected from halogen and -OS(O)₂Q₁; wherein Q₁ is selected from C₁-C₄ alkyl, C₁-C₄ perfluoroalkyl, phenyl, *p*-methylphenyl; and

m is an integer from 1 to 5, and

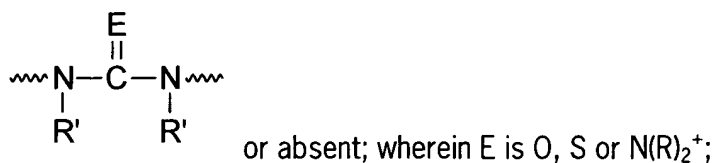
wherein the sum total of carbon atoms in A and (XBX')_nB' together, is greater than 6.

51. (New) A compound according to claim 45, wherein

X is absent;

B is selected from C₁-C₅ alkylene, C₆-C₁₂ arylene or C₂-C₅ acyl;

X' is selected from -O-, -S-, -NR-, -S-S-, -S(O)-, -S(O)₂-, -P(O)(R₁)-, -C(O)-, -C(S)-, -C(O)O-, -C(S)O-, -Se-,



n is 0, 1 or 2; and

B' is C₁-C₅ alkylene, C₆-C₁₂ arylene or is absent; and wherein

each R is independently selected from hydrogen, C₁-C₅ alkyl, C₃-C₁₀ cycloalkyl, C₆-C₁₂ aryl, OR₂ or C₂-C₅ acyl;

R' is the same as R;

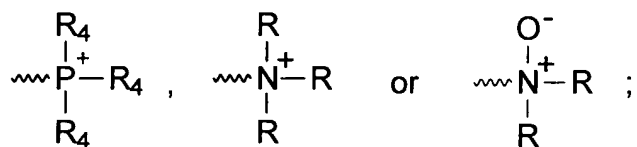
each R₁ is independently selected from hydrogen, C₁-C₅ alkyl, C₃-C₁₀ cycloalkyl, C₆-C₁₂ aryl, halo, OR₂ or N(R)₂;

each R₂ is independently selected from hydrogen, C₁-C₅ alkyl, C₃-C₁₀ cycloalkyl, C₆-C₁₂ aryl or -C(O)R₅;

each R₅ is independently selected from hydrogen, C₁-C₅ alkyl, C₂-C₅ alkenyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₆-C₁₂ aryl, C₁-C₅ alkoxy, C₃-C₅ alkenyloxy, C₃-C₁₀ cycloalkyloxy, C₅-C₁₀ cycloalkenyloxy, C₆-C₁₂ aryloxy, C₁-C₅ alkylthio, C₃-C₅ alkenylthio, C₃-C₁₀ cycloalkylthio, C₅-C₁₀ cycloalkenylthio, C₆-C₁₂ arylthio, OH, SH or N(R)₂;

wherein for each instance that B and/or B' is arylene, the substituents directly attached to the respective arylene rings are in a para, meta or ortho relationship, and

wherein each alkylene, alkenylene, alkynylene, cycloalkylene, cycloalkenylene, arylene, and acyl are optionally independently substituted with hydrogen, C₁-C₅ alkyl, C₂-C₅ alkenyl, C₂-C₅ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₆-C₁₂ aryl, halo, cyano, cyanate, isocyanate, OR_{2a}, SR₆, nitro, arsenoxide, -S(O)R₃, -OS(O)R₃, -S(O)₂R₃, -OS(O)₂R₃, -P(O)R₄R₄, -OP(O)R₄R₄, -N(R'')₂, -NRC(O)(CH₂)_mQ, -C(O)R₅,



wherein R, R₁ and R₅ are as defined above; and

R_{2a} is selected from hydrogen, C₁-C₅ alkyl, C₃-C₁₀ cycloalkyl, C₆-C₁₂ aryl, -S(O)R₃, -S(O)₂R₃, -P(O)(R₄)₂ and -C(O)R₅;

each R₃ is independently selected from hydrogen, C₁-C₅ alkyl, C₃-C₁₀ cycloalkyl, C₆-C₁₂ aryl, C₁-C₅ alkoxy, C₃-C₁₀ cycloalkyloxy, C₆-C₁₂ aryloxy, C₁-C₅ alkylthio, C₃-C₁₀ cycloalkylthio, C₆-C₁₂ arylthio or N(R)₂;

each R₄ is independently selected from hydrogen, C₁-C₅ alkyl, C₃-C₁₀ cycloalkyl, C₆-C₁₂ aryl, C₁-C₅ alkoxy, C₃-C₁₀ cycloalkyloxy, C₆-C₁₂ aryloxy, halo or N(R)₂;

R₆ is selected from C₁-C₅ alkyl, C₃-C₁₀ cycloalkyl, C₆-C₁₂ aryl, C₁-C₅ alkylthio, C₃-C₁₀ cycloalkylthio, C₆-C₁₂ arylthio, -S(O)R₃, -S(O)₂R₃ or -C(O)R₅,

R'' is the same as R;

Q is selected from halogen and -OS(O)₂Q₁; wherein Q₁ is selected from C₁-C₄ alkyl, C₁-C₄ perfluoroalkyl, phenyl, *p*-methylphenyl; and

m is 1 to 5.

52. (New) A compound according to claim 45, wherein

X is absent;

B is selected from C₁-C₅ alkylene, C₆-C₁₂ arylene or C₂-C₅ acyl;

X' is selected from -O-, -S-, -NR-, -C(O)-, -C(O)O-, or is absent;

n is 1; and

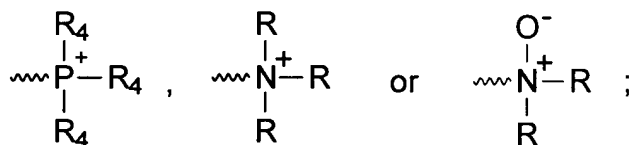
B' is C₁-C₅ alkylene, C₆-C₁₂ arylene or is absent; and

R is selected from hydrogen, C₁-C₅ alkyl, C₆-C₁₂ aryl or C₂-C₅ acyl;

wherein for each instance that B and/or B' is arylene, the substituents directly attached to the respective arylene rings are in a para, meta or ortho relationship, and

wherein each alkylene, arylene, and acyl are optionally independently substituted with

hydrogen, C₁-C₅ alkyl, C₂-C₅ alkenyl, C₂-C₅ alkynyl, C₃-C₁₀ cycloalkyl, C₅-C₁₀ cycloalkenyl, C₆-C₁₂ aryl, halo, cyano, cyanate, isocyanate, OR_{2a}, SR₆, nitro, arsenoxide, -S(O)R₃, -S(O)₂R₃, -P(O)R₄R₄, -N(R'')₂, -NRC(O)(CH₂)_mQ, -C(O)R₅,



wherein each R is independently selected from hydrogen, C₁-C₅ alkyl, C₆-C₁₂ aryl or C₂-C₅ acyl;

R_{2a} is selected from hydrogen, C_1-C_5 alkyl, C_6-C_{12} aryl, $-S(O)R_3$, $-S(O)_2R_3$, $-P(O)(R_4)_2$ or $-C(O)R_5$;
 each R_3 is independently selected from hydrogen, C_1-C_5 alkyl, C_6-C_{12} aryl, C_1-C_5 alkoxy, C_6-C_{12} aryloxy, C_1-C_5 alkylthio, or C_6-C_{12} arylthio;
 each R_4 is independently selected from hydrogen, C_1-C_5 alkyl, C_6-C_{12} aryl, C_1-C_5 alkoxy, C_6-C_{12} aryloxy, C_1-C_5 alkylthio, C_6-C_{12} arylthio, halo or $N(R)_2$;
 each R_5 is independently selected from hydrogen, C_1-C_5 alkyl, C_6-C_{12} aryl, C_1-C_5 alkoxy, C_6-C_{12} aryloxy, C_1-C_5 alkylthio, C_6-C_{12} arylthio, OH, SH or $N(R)_2$;
 R_6 is selected from C_1-C_5 alkyl, C_6-C_{12} aryl, C_1-C_5 alkylthio, C_6-C_{12} arylthio, $-S(O)R_3$, $-S(O)_2R_3$ or $-C(O)R_5$,
 R'' is the same as R above;
 Q is selected from halogen and $-OS(O)_2Q_1$; wherein Q_1 is selected from C_1-C_4 alkyl, C_1-C_4 perfluoroalkyl, phenyl, *p*-methylphenyl; and
 m is 1 to 5.

53. (New) A compound according to claim 45, wherein

X is absent;

B is C_2-C_5 acyl;

X' is NR;

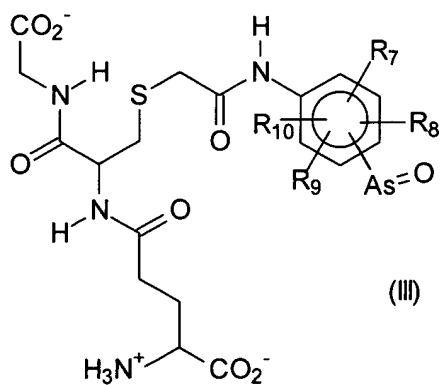
n is 1;

B' is phenylene; and

R is H;

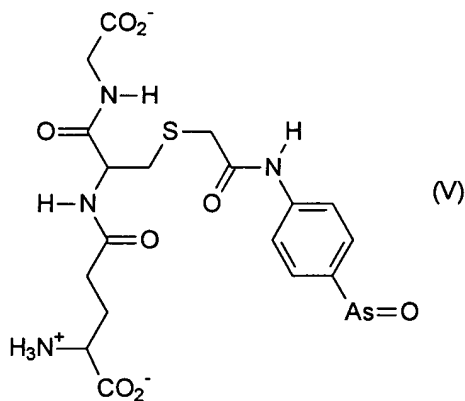
wherein the substituents directly attached to the phenylene ring are in a para-, meta- or ortho-relationship.

54. (New) The compound according to claim 45 represented by Formula III:

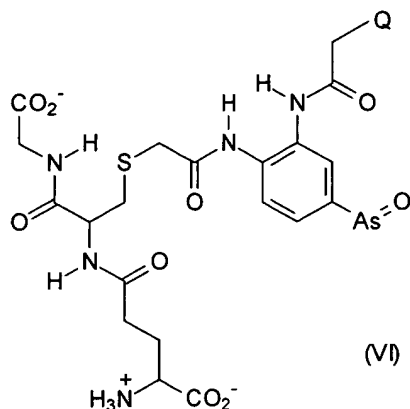


, and wherein

- R_7 to R_{10} are independently selected from the group consisting of: hydrogen, C_1 - C_5 alkyl, C_6 - C_{12} aryl, halogen, hydroxy, amino, nitro, carboxy, C_1 - C_5 alkoxy, $-OS(O)_2R_3$ or $-NHC(O)CH_2Q$ wherein Q is halogen, $-OS(O)_2CH_3$, $-OS(O)_2C_6H_5$ or $-OS(O)_2$ - p -tolyl.
55. (New) The compound according to claim 54, wherein R_7 to R_{10} are independently selected from hydrogen, halogen, hydroxy, amino, nitro, carboxy, C_1 - C_5 alkoxy, methyl, ethyl, isopropyl, tert-butyl, phenyl, and $-NHC(O)CH_2Q$ wherein Q is halogen, $-OS(O)_2CH_3$, $-OS(O)_2C_6H_5$, or $-OS(O)_2$ - p -tolyl.
56. (New) The compound according to claim 54, wherein the arsenoxide ($-As=O$) group is at the 4-position of the phenylene ring.
57. (New) The compound according to claim 45, wherein the compound is 4-(N -(S-glutathionylacetyl)amino)phenylarsenoxide (GSAO) and is represented by Formula V:

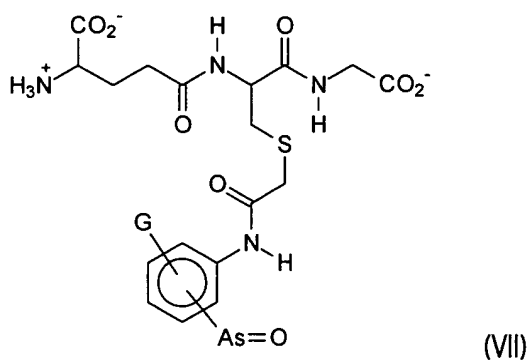


58. (New) The compound according to claim 45, wherein the compound is represented by Formula VI:



wherein Q is any halogen.

59. (New) The compound according to claim 45, wherein the compound is represented by Formula VII:



wherein G is selected from the group consisting of: hydrogen, halogen, hydroxy, amino, nitro, carboxy, C₁-C₅ alkoxy, C₁-C₅ alkyl and C₆-C₁₂ aryl and -NHC(O)CH₂Q wherein Q is halogen, -OS(O)₂CH₃, -OS(O)₂C₆H₅ or -OS(O)₂p tolyl.

60. (New) The compound according to claim 59, wherein G is selected from the group consisting of: hydrogen, halogen, hydroxy, amino, nitro, carboxy, C₁-C₅ alkoxy, methyl, ethyl, iso-propyl, tert-butyl, phenyl, and -NHC(O)CH₂Q wherein Q is halogen, -OS(O)₂CH₃, -OS(O)₂C₆H₅ or -OS(O)₂p tolyl.
61. (New) The compound according to claim 59, wherein G is selected from the group consisting of hydroxy, fluorine, amino, and nitro.

62. (New) The compound according to claim 45, which is linked to a detector group.
63. (New) The compound of claim 62, wherein said detector group is selected from the group consisting of fluorophore, biotin, a radionucleotide, fluorescein, and a group comprising a transition element.
64. (New) The compound according to claim 62, wherein the detector group is biotin.
65. (New) The compound according to claim 63, wherein the radionucleotide is selected from the group consisting of ^3H , ^{14}C , ^{32}P , ^{33}P , ^{35}S , ^{125}I , ^{131}I , ^{123}I , ^{111}In , ^{105}Rh , ^{153}Sm , ^{67}Cu , ^{67}Ga , ^{166}Ho , ^{177}Lu , ^{186}Re , ^{188}Re , and $^{99\text{m}}\text{Tc}$.
66. (New) The compound according to claim 65, wherein the radionucleotide is selected from the group consisting of ^3H or ^{14}C .
67. (New) A pharmaceutical composition comprising a compound of claim 45, together with a pharmaceutically acceptable carrier, adjuvant and/or diluent.
68. (New) The compound according to claim 74, wherein G is selected from the group consisting of hydroxy, fluorine, amino, and nitro.